

REMARKS

The present Amendment and request for reconsideration is filed in response to the Office Action mailed August 11, 2004. Claims 1-23 remain pending in the application. Claims 24-27 are withdrawn subject to the Applicant's right to pursue subject matter of these claims in one or more related applications.

In reviewing the specification and drawings while preparing this response, we have noted that there were various different terms in the Specification that had been used with the same identification numbers. For example, 230 is sometimes a "coating", other places a "material", other times a "photoresist". We have replaced this with "photosensitive material" throughout.

No new matter is introduced through the adjustment of these terms in this Amendment.

Response to § 102(e) Rejections

In the Office Action, Claims 1-23 were rejected under 35 U.S.C. § 102(e) as being anticipated by Lifshitz et al. (US 6,225,026 – hereafter referred to as the "Lifshitz Patent").

Applicant respectfully traverses the rejection.

Although the Examiner is correct in noting similarities between screen printing and the method invented by the Applicant, the Applicant's invention has certain characteristics that are not taught or suggested in the Lifshitz Patent.

The Examiner specifically refers to Figure 3 of the Lifshitz Patent, which shows a prior art screen printing process, as demonstrating the claimed invention, in particular Claim 1.

We must respectfully disagree with this statement.

As amended in a communication on April 29, 2004, Claim 1 states:

"A process for pattern formation comprising the steps of:
coating a carrier with a photosensitive material,
exposing the photosensitive material to a pattern of radiation, and
physically transferring the exposed material to a substrate."

Claim 2 adds

"...the step of developing the exposed photosensitive material after the material is transferred to the substrate."

Shown in Figure A-1 is a redrawn version of the process steps described in Figure 3 of the Lifshitz Patent. We have expanded the drawing somewhat, clarifying the steps as understood from reading col. 1, lines 55-67 and col. 2 lines 1-6 of the Lifshitz Patent.

Figure A-2 shows the steps of the Applicant's invention, adapted from Figures 2 and 3 of the Application.

Our illustration differs somewhat from the style of Figure 3 of the Lifshitz Patent, in that we have also shown the Lifshitz process steps with an inversion of the stencil before transferring the pattern to the paper. By "inversion", we mean turning the prepared stencil upside down. We have included this to allow easier comparison of the two methods. Although not necessary for the practice of the Applicant's invention, the drawings in Figures 2 and 3 of the Application illustrate the present invention with this inversion step. If the Lifshitz patent indeed anticipates the Applicant's invention, the correspondence should be more apparent if both are illustrated with this inversion.

As the Examiner states, and as is clear from Figure A-1, the method of Figure 3 of the Lifshitz Patent can be understood to show a portion of the Applicant's claimed invention, namely

A process for pattern formation comprising the steps of:
coating a carrier with a photosensitive material,
exposing the photosensitive material to a pattern of radiation."

if the word "carrier" is interpreted as corresponding to Lifshitz's term "fine mesh 38" and "photosensitive material" is interpreted as corresponding to Lifshitz's term "UV curable material (photo polymer) 32" (although in the Lifshitz Patent, the fine mesh in Figure 3 has already been coated to form the "stencil", and is not coated as part of the process). The Lifshitz stencil at step f) of Figure A-1 is very similar to the Applicant's carrier at step d) of Figure A-2.

However, the method of Figure 3 of the Lifshitz Patent differs from the Applicant's invention in there is no step of "physically transferring the exposed material to a substrate" taught or suggested in the Lifshitz Patent.

Instead, the method of Figure 3 of the Lifshitz Patent proceeds to develop the photo polymer 32 while it is still attached to the fine mesh 38. This would be equivalent to developing the photosensitive material 230 while it is still attached to the carrier 201. The Applicant's claimed invention clearly does not practice this step. Furthermore, after development, the photosensitive material 32 in the Lifshitz Patent no longer exists, only the cured material 39 remains. The step of "physically transferring" the photosensitive material 32 (comprising cured material 39) to the paper 35 cannot occur. The material has dissolved.

In the Applicant's invention, the entire photosensitive material 230 comprising exposed regions 260 is physically transferred to the substrate 201. Development only occurs after the physical transfer of the material 230 comprising the exposed regions 260 has been completed.

Because the method of Figure 3 of the Lifshitz Patent clearly does not contain a step in which the photo polymer 32 comprising cured material 39 is physically transferred to the paper 35, the method shown in Figure 3 of the Lifshitz patent does not anticipate the step of "physically transferring the exposed material to a substrate", and therefore does not anticipate Claim 1 of the Applicant's invention.

In Claim 2 of the Applicants' invention, development of the photosensitive material only occurs after the physical transfer has taken place. In the method of Figure 3 of the Lifshitz Patent, development of photo polymer 32 (corresponding to the photosensitive material 230) clearly occurs while still attached to the fine mesh 38 (corresponding to the carrier 201), and not later. Therefore, the method of Figure 3 of the Lifshitz Patent also does not anticipate Claim 2 of the Applicant's invention.

Since all of the pending claims are dependent on Claim 1 or claim 2, and Claims 1 and 2 are not anticipated by the method of Figure 3 of the Lifshitz Patent, all the subsequent dependent claims are also not anticipated by Figure 3 of the Lifshitz Patent.

With the amendment to the Specification presented here, the Specification now uniformly uses the term "photosensitive material" for the undeveloped layer denoted by the identification number 230. "Material" is therefore also used unambiguously for the entire layer, and not for "exposed regions 260". As such, there we believe there is no ambiguity, and the claim should be allowed as amended on April 29, 2004.

However, we understand it is possible that Claim 1 as amended on April 29, 2004, if read without careful reference to the Specification, might also allow the interpretation of the term "exposed material" as meaning only the exposed regions 260 and not the entire layer of photosensitive material 230, which comprises exposed regions 260. For this reason, if the Examiner feels that some ambiguity remains, we would consider filing a further Amendment for Claims 1 and 2 using the following language:

Claim 1 (currently amended): A process for pattern formation comprising the steps of:
coating a carrier with a photosensitive material,
exposing the photosensitive material to a pattern of radiation, and
physically transferring the photosensitive material comprising exposed
regions material to a substrate.

Claim 2 (currently amended): The process of claim 1, further comprising the step of developing the exposed photosensitive material comprising exposed regions after the material is transferred to the substrate.

We would appreciate clarification from the Examiner, preferably in a telephone communication, on this matter.

In reviewing the other embodiments of the Lifshitz Patent, we do find some elements (such as the use of UV exposure, the use of adhesion layers, etc.) which are similar to some of the additional elements of the dependent claims of the present invention. However, none of the embodiments provide the step of physically transferring an exposed material to a substrate, especially prior to development of the material.

Therefore, as amended on April 29, 2004, Claims 1 and 2 are clearly not anticipated by any of the embodiments of the Lifshitz Patent. And as Claims 3-23 are also dependent on Claims 1 and/or 2, they also are not anticipated by the Lifshitz Patent.

We therefore respectfully request that the Examiner withdraw the rejections and pass the case to issue at the earliest possible date.

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